



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 8

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Ref: EPR-N

Jenna Whitlock, Acting State Director
Utah State Office
Bureau of Land Management
c/o Stephanie Howard, Project Manager
170 South 500 East
Vernal, Utah 84078

Re: Scoping Comments for the Crescent Point Energy Utah Federal-Tribal Well
Development Project Environmental Impact Statement

Dear Ms. Whitlock:

The U.S. Environmental Protection Agency Region 8 has reviewed the Bureau of Land Management (BLM) Vernal Field Office April 8, 2016 notice of intent to prepare an Environmental Impact Statement (EIS) for the Crescent Point Energy ("Applicant") Utah Federal-Tribal Well Development Project. In accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act (CAA), we are providing scoping comments. These comments convey what we believe are important questions or concerns that we recommend be addressed during the NEPA process.

The project area is located within the Uinta Basin in Duchesne and Uintah Counties, Utah, directly south of the cities of Roosevelt and Ballard. It appears that the project area encompasses lands located on both the former Uncompahgre Reservation and the former Uintah Valley Reservation of what is currently the Uintah and Ouray Indian Reservation. Pursuant to relevant case law, the eastern portion of the project area within the former Uncompahgre Reservation is located entirely in Indian country and the western portion of the project area within the former Uintah Valley Reservation is located on both Indian country and non-Indian country land. EPA directly implements its federal environmental laws in Indian country in Utah. Thus, with respect to the Crescent Point proposed project, EPA will implement its federal environmental laws with respect to the portions of the proposed project that are located on Indian country lands. For the portions of the proposed project located on non-Indian country lands, the State of Utah has been approved to implement certain federal environmental programs.

As our Agencies have discussed, ozone levels in the Uinta Basin are a known and serious health concern. Even with very little drilling activity in the Basin this winter, ozone levels are again exceeding the National Ambient Air Quality Standard (NAAQS) of 70 ppb with 8-hour concentrations peaking at 120 ppb. The most recent non-regulatory three-year design value (2012-2014) for the area is 93 ppb at the Ouray monitor, and 8-hour ozone concentrations in

2013 reached values as high as 141 ppb at the Ouray monitor. This concentration corresponds to an Air Quality Index value of 238, and is categorized as “Very Unhealthy.” Given the existing compromised condition of the Airshed, any project-specific direct and indirect impacts to ozone levels in the Uinta Basin should be avoided.

The Applicant’s proposed plan of development for their federal, state, private, and tribal trust leases includes the following activities: up to 3,925 new oil and gas wells and 863 miles of roads; 693 miles of pipelines co-located with the proposed roads; 170 miles of cross-country pipelines and 400 miles of trunk pipelines; five produced water treatment facilities; five salt water disposal wells; 20 central tank batteries; four gas processing plants; eight oil storage areas; and four equipment storage areas. It will be important that the Draft EIS alternatives include specific mitigation measures to prevent adverse ozone impacts. A project of this scale is expected to substantially increase ozone precursor emissions over the current, impaired baseline. The EPA, therefore, has significant concerns that this proposal has the potential to contribute to ozone exceedances or violations. These potential project ozone impacts may be of sufficient magnitude to adversely affect public health, welfare or environmental quality resulting in objectionable or unsatisfactory impacts to the residents in the Basin. The EPA is not familiar enough with the Applicant’s existing operations in the Basin to enable us to suggest specific mitigation approaches at this time. **If the project does not include sufficient mitigation to avoid adverse air quality impacts at the Draft EIS stage, it would be likely to trigger the EPA’s adverse rating criteria.**

We recommend the Applicant be required to develop and commit to measures that will provide reasonable assurance that the project will not substantially increase ozone precursor emissions and will not contribute to ozone exceedances. It will be important to specify whether such Applicant Committed Environmental Protection Measures (ACEPMs) and mitigation will be required project-wide, versus for example, only on BLM surface estate or federal mineral estate.

Key Topics the EPA Recommends the BLM Address during the NEPA Process

Based on our current understanding of the proposed project, the EPA has identified the following topics that we recommend be analyzed and disclosed in the Draft EIS so that potential impacts to public health and the environment can be fully understood: (1) air resources; (2) greenhouse gas (GHG) emission and climate change; (3) groundwater resources; (4) surface water resources; (5) public drinking water supply resources; (6) wetlands, riparian areas and floodplains; (7) water management and water resource monitoring; and (8) environmental justice. Please refer to Enclosure 1 for our detailed comments on these topics.

Closing

Thank you for the opportunity to participate in the scoping process for the Crescent Point Energy Utah Federal-Tribal Well Development Project EIS. The EPA hopes to assist the BLM in the development of an analysis which will adequately address potential environmental impacts and identify appropriate mitigation measures. If you have any questions or comments, please feel free to contact me at 303-312-6704, or your staff may wish to contact Amy Platt at 303-312-6449 or platt.amy@epa.gov.

Sincerely,

Philip S. Strobel
Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosure

Email cc w/out enclosure: Ester McCullough, BLM Vernal Field Office Manager

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ENCLOSURE 1

EPA's Detailed Scoping Comments Crescent Point Energy Utah Federal-Tribal Well Development Project

(1) Air Resources

Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions through NEPA

Oil and gas development includes emissions of Clean Air Act criteria air pollutants and other hazardous air pollutants (HAPs) that can cause or contribute to human health impacts or impacts to Air Quality Related Values (AQRVs) such as visibility, vegetation, water, fish and wildlife. The air quality analysis for this Draft EIS is particularly important given the large number of wells and associated emissions proposed in an area where the ambient air is already compromised. We recommend that the Draft EIS consider and disclose the potential environmental effects of oil and gas development on air quality in the project area, and determine whether there is a need to impose project-specific mitigation measures through conditions of approval or other mechanisms to minimize the potential air quality impact of the project.

The EPA, U.S. Department of Agriculture and U.S. Department of Interior entered into a "Memorandum of Understanding (MOU) Regarding Air Quality Analyses and Mitigation for Federal Oil and Gas Decisions through the National Environmental Policy Act Process" on June 11, 2011. We look forward to using this tool to ensure effective and efficient NEPA air quality analyses. We commend the BLM Utah office for the current statewide air quality analysis collaboration underway on the Utah Air Resources Technical Advisory Group (RTAG). It will be appropriate to utilize the MOU's stakeholder process to share reasonably foreseeable development (RFD) and emissions inventory information and to determine any steps for the air quality analysis, such as quantitative air quality modeling. It also will be helpful to understand whether other modeling platforms, such as the Intermountain West Air Quality Study, will be utilized in this effort. We look forward to continued participation in the stakeholder process.

The air quality analysis for this Draft EIS is particularly important given regional concerns with high ozone levels. In addition, recent studies have increased awareness of concerns with the potential health impacts associated with hazardous air pollutants (HAPs) emitted during oil and gas activities¹²³⁴.

¹ McKenzie *et al.*, Birth Outcomes and Maternal Residential Proximity to Natural Gas Development in Rural Colorado, *Environmental Health Perspectives*, April 2014.

² Adgate *et al.*, Potential Public Health Hazards, Exposures and Health Effects from Unconventional Natural Gas Development. *Environmental Science and Technology*, 2014.

³ McKenzie *et al.*, Human Health Risk Assessment of Air Emissions from Development of Unconventional Natural Gas Resources. *Sci Total Environ* 424:79-87.

⁴ Paulik *et al.*, Impact of Natural Gas Extraction on PAH Levels in Ambient Air, *Environmental Science and Technology*, 2015.

Breathing ozone can trigger a variety of health problems including chest pain, coughing, throat irritation, and congestion. It can worsen existing respiratory health conditions such as bronchitis, emphysema, and asthma. Ground level ozone also can reduce lung function and inflame the lining of the lungs. Repeated exposure may permanently scar lung tissue.

HAPs, also known as toxic air pollutants or air toxics, are those pollutants that cause or may cause cancer or other serious health effects, such as reproductive or developmental effects, and/or adverse environmental and ecological impacts. Multiple HAPs are known to be emitted during oil and gas activities, and recent studies suggest that people who reside in close proximity to natural gas development may have an increased risk for adverse health impacts.

In addition, the project area is near CAA Class I Areas, including Arches National Park, and Sensitive Class II areas, including Ouray National Wildlife Refuge and Dinosaur National Monument. Class I Areas are certain large national parks and wilderness areas that the CAA provides with special protection for AQRVs, including visibility. Sensitive Class II Areas are areas for which Federal Land Managers have identified air quality and/or visibility as valued resources.

Analysis Recommendations

With these issues in mind, the EPA recommends that the Draft EIS include an evaluation of the current air quality conditions and trends as well as the direct, indirect, and cumulative impacts from potential activities for:

- Each of the criteria pollutants relevant to the project and their appropriate National Ambient Air Quality Standards (NAAQS), i.e., ozone, particulate matter, carbon monoxide, nitrogen oxides, and sulfur dioxide;
- AQRVs in potentially impacted Class I areas and sensitive Class II areas;
- Prevention of Significant Deterioration increment at potentially impacted Class I and Sensitive Class II Areas; and
- HAPs and relevant health-based risk thresholds for HAPs including acetaldehyde, benzene, ethyl benzene, ethylene glycol, formaldehyde, methanol, n-hexane, toluene, xylene (mixture), and any other compounds that the BLM identifies as potential hazardous air pollutants in the project area.

The EPA supports the current efforts by the BLM to address these components of the analysis with quantitative impact assessment techniques including near-field dispersion modeling and far-field photochemical grid modeling.

Mitigation

The EPA recommends that the BLM identify in the Draft EIS the mitigation measures (including control measures and design features) it would apply to the project in the event that potential adverse impacts to air quality or AQRVs on affected lands are predicted. These measures could include equipment type or design requirements, emission standards or limitations, best management practices (BMPs), dust suppression measures for unpaved roads and construction

areas, add-on control technologies, and limitations on the density and/or pace of development. The EPA also recommends that the BLM identify the regulatory mechanisms it will use to ensure implementation of these measures including conditions of approval.

To protect human health, the EPA recommends identifying and implementing an oil and gas surface occupancy buffer from occupied structures such as homes, schools and office buildings. The buffer or “setback” distance should be sufficient to minimize the potential for public health impacts associated with exposure to the following: near-field criteria pollutants and HAPs emissions; any other potential toxic emissions such as hydrogen sulfide releases; and emissions associated with drill cuttings and flow back, well blowout or other explosive events. Setbacks can be an effective health protection tool because they provide an opportunity for emitted air pollutants to disperse before entering an area where they could be respired. They also provide extra time to warn residents of any unintended releases or emissions. We recommend the setback distances be informed by the following factors:

1. The near-field modeling results for this EIS. We recommend the setback buffer ensures that people are not exposed to air pollution levels exceeding the NAAQS or other health based thresholds.
2. Whether mitigation measures and BMPs are being required to reduce risks to nearby residents and other building occupants. Examples of risk reduction mitigation may include: requiring closed-loop drilling and completion; prohibiting reserve pits or produced water ponds; using lower emitting engine technology; capturing emissions from tanks, separators, and glycol dehydrators; and implementing stringent fugitive vapor controls.
3. The composition of the project area’s oil and gas resource. For example, certain resource conditions may indicate the need for a larger setback buffer, including those with high HAPs content, higher explosive potential, or high sulfur or hydrogen sulfide content.

We understand the State of Utah does not currently have an established minimum setback distance. It will therefore be up to this EIS to determine appropriate, protective setback distances from occupied structures. Some states in the region apply minimum setback distances of 500 feet (e.g. Colorado, North Dakota).

(2) Greenhouse Gas Emissions and Climate Change

We recommend the Draft EIS include an estimate of the GHG emissions associated with the project and analyze reasonable alternatives and/or practicable mitigation measures to reduce project-related GHG emissions, locally and downstream. In addition, we recommend that the NEPA analysis consider whether changes to the design of the proposal to incorporate GHG reduction measures are appropriate. We recommend that the Draft EIS make clear whether commitments have been made to ensure implementation of design or other measures to reduce GHG emissions.

“Environmental Consequences” Section

The EPA recommends that the Draft EIS estimate the GHG emissions associated with the proposal and its alternatives including emissions associated with the end use of the oil and gas

due to the reasonably close causal relationship to the project. Example tools for estimating and quantifying GHG emissions can be found on CEQ's NEPA.gov website. These emissions levels can serve as a basis for comparison of the alternatives with respect to GHG impacts. The EPA recommends that the Draft EIS describe measures to reduce GHG emissions associated with the project, including reasonable alternatives or other practicable mitigation opportunities and disclose the estimated GHG reductions associated with such measures, for example, energy efficiency, consideration of renewable energy resources to address energy needs for compressor stations and other facilities. We do not recommend comparing GHG emissions from a proposed action to global emissions. As noted by the CEQ revised draft guidance, "[t]his approach does not reveal anything beyond the nature of the climate change challenge itself: [t]he fact that diverse individual sources of emissions each make relatively small additions to global atmospheric GHG concentrations that collectively have huge impact." We also recommend that you do not compare GHG emissions to total state or U.S. emissions, as this approach does not provide meaningful information for a project level analysis.

Effects of Climate Change on Project Impacts:

The EPA recommends that the Draft EIS describe potential changes to the affected environment that may result from climate change. Including future climate scenarios in the Draft EIS would help decision makers and the public consider whether the environmental impacts of the alternatives would be exacerbated by climate change. If impacts may be exacerbated by climate change, additional mitigation measures may be warranted.

Climate Change Adaptation:

The EPA recommends considering climate adaptation measures based on how future climate scenarios may impact the project in the Draft EIS. The National Climate Assessment (NCA), released by the U.S. Global Change Resource Program 5 contains scenarios for regions and sectors, including energy and transportation. We recommend that the Draft EIS use NCA or other peer reviewed climate scenarios because this can inform alternatives analysis and possible changes to the proposal can improve resilience and preparedness for climate change. Changing climate conditions can affect a proposed project, as well as the project's ability to meet the purpose and need presented in the Draft EIS. In addition to considering the resilience and preparedness of a facility itself, in some cases adaptation measures could avoid potentially significant environmental impacts.

(3) Groundwater Resources

Groundwater Resource Characterization

It is important to characterize both the existing and potential groundwater drinking water resources in the project area. We recommend the Draft EIS include the following information:

- A description of all aquifers in the study area, noting which aquifers are Underground

⁵ https://ceq.doe.gov/current_developments/GHG_accounting_methods_7Jan2015.html

Sources of Drinking Water (USDWs). Federal Safe Drinking Water Act regulations define a USDW as an aquifer or portion thereof: (a)(1) which supplies any public water system; or (2) which contains a sufficient quantity of ground water to supply a public water system; and (i) currently supplies drinking water for human consumption; or (ii) contains fewer than 10,000 mg/l total dissolved solids; and (b) which is not an exempted aquifer (See 40 CFR Section 144.3);

- Available water quality and water yield information from each aquifer;
- Generalized maps depicting the location of sensitive groundwater resources such as municipal watersheds, source water protection zones (available from the Utah Department of Environmental Quality- UDEQ), sensitive aquifers, and recharge areas;
- Descriptions and locations of groundwater use (e.g., public water supply wells, domestic wells, springs, and agricultural and stock wells); and
- A map and discussion of proposed wells, existing producing wells, and nonproducing wells in the area including their status (e.g., idle, shut-in, plugged, and abandoned), if available. Please contact the Utah Division of Oil, Gas, and Mining for all oil and gas well information and the Utah Division of Water Rights for water well information.

Ground Water Impacts, Monitoring and Mitigation

The EPA recommends that the Draft EIS analyze potential impacts to groundwater quality and quantity related to resource extraction such as mining and oil and gas production. Potential impacts include those associated with the following: leaks and spills; production and disposal of produced water or processing waters; use of pits, underground injection control (UIC) wells, infiltration basins and evaporation ponds; production wellbore integrity; closure requirements; pipeline use; and impacts associated with re-stimulation and abandonment of existing wells.

The EPA also recommends that the Draft EIS discuss measures required at the field-wide plan of development or application for permit to drill (APD) stage to minimize the potential for these impacts to occur and how the operations will be monitored to determine if the mitigation measures are effective. Appropriate groundwater protection measures can vary depending on hydrologic conditions and the presence of drinking water resources. We recognize that regulations and guidance documents exist to guide BLM and the operator in protecting water resources during oil and gas development and production operations (e.g., BLM Gold Book, Onshore Order #2, State regulations, etc.). We recommend that the Draft EIS discuss how groundwater will be protected according to these existing regulations and guidances. In addition, we note that, in many cases, the existing regulations and guidances leave much of the decision-making regarding water resource protection to determinations by the authorized officer on a well-by-well basis. We recommend that the BLM utilize the NEPA process to streamline or add consistency to these decisions where possible. For example, an understanding of hydro-geological features can help to identify critical elements of well design that will likely be necessary to achieve effective protection of USDWs at the APD stage. In addition, adequate information may exist at this stage to identify stipulations that will apply to future development, such as for protection of existing public and private drinking water supply wells.

Specifically, the EPA recommends that the BLM analyze and disclose potential groundwater protection, monitoring and mitigation measures, including:

- BMPs and measures such as water reuse, closed loop drilling, lining of evaporation ponds, monitoring of water quality and water levels, closure and monitoring of tailings ponds, reserve pits and evaporation ponds;
- Setback stipulations, such as No Surface Occupancy (NSO), to minimize the potential for impacts to potential drinking water resources, including domestic water wells and public water supply wells. Setbacks are effective health and environmental protection tools because they provide an opportunity for released contaminants to attenuate before reaching a water supply well. They may also afford an opportunity for a release to be remediated before it can impact a well, or for an alternate water supply to be secured. For these reasons, we recommend that the BLM require a minimum 500 foot NSO setback from private wells. We note that a number of states including Colorado and North Dakota have adopted a 500 foot setback from occupied dwellings (and by default, the associated domestic well). The EPA also encourages the BLM to consider source water protection zones delineated by UDEQ when evaluating the basis and need for setbacks from public water supply wells;
- A mitigation plan for remediating future unanticipated impacts to drinking water wells, such as requiring the operator to remedy those impacts through treatment, replacement or other appropriate means;
- A general production well schematic that depicts the following: casing strings; cement outside and between the various casing strings; and the relationship of the well casing design to potentially important hydro-geological features such as confining zones and aquifers or aquifer systems that meet the definition of a USDW. Discuss how the generalized design will achieve effective isolation of USDWs from production activities and prevent migration of fluids of poorer quality into zones with better water quality; and
- Abandonment procedures for sealing wells no longer in use in order to reduce the potential for inactive wells to serve as the conduits for fluid movement between production zone(s) and aquifer(s). This is particularly important where existing wells do not have surface casing set into the base of USDWs and lack sufficient production casing cement.

(4) Surface Water Resources

Surface Water Characterization

The EPA recommends the Draft EIS describe the current water quality conditions for surface water bodies within the project area, including intermittent, perennial, and ephemeral streams, rivers, lakes, reservoirs, and surface water drinking water resources. We recommend comparing existing conditions to existing water quality standards or other reference conditions and presenting associated water quality status and trends.

The EPA also recommends the Draft EIS include the following information:

- A map of water bodies within and/or downstream of the project area that includes perennial, intermittent and ephemeral water bodies; water body segments classified by the UDEQ as water quality impaired or threatened under the Clean Water Act (CWA)

Section 303(d); water bodies considered not impaired by UDEQ, and water bodies that have not yet been assessed by the UDEQ for impairment status. We also recommend that a table be provided to identify the designated uses of water bodies and the specific pollutants of concern, where applicable; and

- Maps and descriptions of topography and soils, specifically steep slopes and fragile or erodible soils, especially near surface waters and intermittent/ephemeral channels.

Surface Water Impacts

We recommend that the Draft EIS analyze potential impacts to surface waters related to erosion and sedimentation from land disturbance and stream crossings, as well as potential impacts associated with oil and gas well development, including drilling and production and potential spills and leaks from pits, evaporation ponds, and pipelines. We also recommend that the BLM analyze potential impacts to impaired water bodies within and/or downstream of the project area, including water bodies listed on the most recent EPA-approved CWA § 303(d) list and coordinate with UDEQ if there are identified potential impacts to impaired water bodies (in order to avoid causing or contributing to the exceedance of water quality standards). Where a Total Maximum Daily Load (TMDL) exists for impaired waters in the area of potential impacts, we recommend that pollutant loads comply with the TMDL allocations for point and nonpoint sources. Where new loads or changes in the relationships between point and nonpoint source loads are created, we recommend that the BLM work with UDEQ to revise TMDL documents and develop new allocation scenarios that ensure attainment of water quality standards. Where TMDL analyses for impaired water bodies within, or downstream of, the project area still need to be developed, we recommend that proposed activities in the drainages of CWA impaired or threatened water bodies be either carefully limited to prevent any worsening of the impairment or avoided where such impacts cannot be prevented.

Erosion and Sediment Load Analysis

Increased sediment from surface disturbance may degrade water quality. Because sediment loading has already caused impairment of water bodies in the project area, and oil and gas development activities that may be authorized under this plan of development would result in new surface disturbance that may enable erosion, it is important the Draft EIS include information about this concern. Erodible soils may represent a significant source of pollutants in the project area. Depending on a host of variables including soil characteristics, industrial operations and topography, associated runoff could introduce sediments as well as salts, heavy metals, nutrients and other pollutants into surface waters. To fully disclose and, if necessary, mitigate the potential impacts of soil disturbance, we recommend that the Draft EIS include an estimate of erosion rates and resulting impacts to water quality for each alternative. For example, erosion rates could be calculated using the Water Erosion Prediction Project model (WEPP), a web-based interface developed by the U.S. Department of Agriculture, Agricultural Research Service, which can be accessed at <http://www.ars.usda.gov/News/docs.htm?docid=10621>. We recommend that the BLM consider using this model or another appropriate model that would be applicable to this project area.

Surface Water Mitigation

Contaminants from surface events such as spills, pit and pipeline leaks, and nonpoint source runoff from surface disturbance have the potential to enter and impact surface water resources if these events occur in close proximity to water bodies. If surface activities are set back from the immediate vicinity of surface water, wetlands, and designated source water protection areas, this provides an opportunity for accidental releases to be detected and remediated before impacts reach water resources. If accidental releases are not detected, the setback provides a safety factor and some possibility of natural attenuation occurring. Setbacks also help prevent nonpoint source pollutants such as sediments from impacting surface waters.

Accordingly, the EPA recommends that the Draft EIS include an evaluation of setback distances identified through leasing stipulations such as NSO for perennial waters including lakes and reservoirs, intermittent and ephemeral streams, steep slopes, and impaired waters within the project area. The EPA recommends the following minimum NSO setbacks:

- Minimum 100 foot NSO setback from slopes greater than 30%;
- Minimum 500 foot NSO setback for flowing waters (rivers and streams) or 100-year floodplain, whichever is greater;
- Minimum 500 foot NSO setback for lakes, ponds and reservoirs, wetland and riparian areas and springs;
- Minimum 750 foot NSO setback for 303(d) Impaired waters;
- Minimum 1,000 foot NSO setback for special or significant waters; and
- Minimum 100 foot NSO setback for intermittent and ephemeral streams.

(5) Public Drinking Water Supply Sources

Public Drinking Water Supply Source Characterization

In order to ensure that public drinking water supply sources (e.g., surface water sources, including groundwater under the direct influence of surface water (GWUDISW) sources, and groundwater sources) are protected from potential impacts associated with oil and gas development activities in the project area, it is important to identify where these sources are located. Therefore, the EPA recommends that the Draft EIS include a map depicting source water protection areas for public water supply wells and surface water intakes (streams, rivers and reservoirs) in accordance with State and Tribal data security requirements. Once these resources are identified, we recommend that the document include an analysis of the potential impacts to drinking water sources. Please contact Kate Johnson, UDEQ, at 801-536-4206 or katej@utah.gov, for these GIS layers.

Public Drinking Water Supply Source Mitigation

In order to ensure public drinking water supply sources (e.g., surface water sources, including GWUDISW sources, and groundwater sources) are protected from potential impacts associated

with oil and gas development activities, the EPA recommends the following NSO protections.

Municipal Supply Watersheds⁵ - NSO within any of the following areas as deemed appropriate by the BLM:

- The entire watershed;
- Local Source Water Protection Planning Areas where delineated by the State or community; or
- Source Water Assessment Areas delineated by the State.

For surface water sources, if the Municipal Supply Watersheds NSO is not deemed feasible by the BLM, then at a minimum, we recommend the Draft EIS include a 1,000-foot NSO setback on both sides of the river or stream, for 10 miles upstream of the intake. For lakes and reservoirs, this would include a 1,000-foot NSO setback around the water body.

For groundwater and GWUDISW sources, if the Municipal Supply Watersheds NSO stipulation is not deemed feasible by the BLM, we recommend a minimum one-half mile (2,640 feet) NSO concentric buffer for these sources.

The EPA also recommends the BLM include a commitment in the Final EIS and Record of Decision to provide notice to lessees regarding these important areas in the project area. Lease notices for drilling within Source Water Protection (SWP) Zones of public water supplies are now being used for all wells drilled under BLM authority within SWP Zones in Utah.

(6) Wetlands, Riparian Areas and Floodplains

We recommend that the Draft EIS present inventories and maps of existing wetlands and waters of the U.S. within the project area, including waters that are regulated under Section 404 of the CWA and wetlands and waters that are protected under Executive Order 11990 – Protection of Wetlands (May 24, 1977). We suggest providing information on acreages and channel lengths, habitat types, values, and functions of these waters.

We recommend that the BLM describe potential indirect impacts to wetlands and riparian areas that could occur from the project due to impacts on the following:

- Stream structure and channel stability;
- Streambed substrate, including spawning habitats; and
- Stream bank vegetation, riparian habitats, and aquatic biota.

BLM-authorized activities in the project area, including oil and gas development and construction activities, have the potential to cause changes in hydrology due to surface disturbance, compaction and increased run-off. These changes in hydrology may result in stream structure failure and additional sediment loading of wetlands and riparian areas.

We recommend that the Draft EIS analyze methods to protect wetlands, riparian areas and floodplains, including the following:

- Prohibit surface disturbing activities within 500 feet of surface water and riparian/wetland areas;
- Apply a NSO restriction on wetland areas greater than 20 acres and on designated 100-year flood plains;
- Leasing stipulations to protect floodplains, such as NSO within the 100-year floodplain; and
- Delineation and marking of perennial seeps, springs and wetlands on maps and on the ground prior to project level development to ensure identification of these resources to facilitate their protection.

We also recommend including a list of potential mitigation requirements and BMPs that may be applicable at the project level for grazing, construction, oil and gas well drilling and production activities to prevent adverse impacts to these aquatic resources. These could include silt fences, detention ponds and other stormwater control measures.

(7) Water Management and Water Resource Monitoring

Water Management

Water demand associated with drilling and completion of new wells in the project area is an important consideration that will benefit from analysis and disclosure. Depletion of surface water in the project area watersheds may affect major rivers and produced water from oil and gas development may affect groundwater. We recommend that the Draft EIS include a general discussion of the following:

- A range of estimated water demand per well developed in the project area (based on predicted well depths, formation characteristics, and well designs, as well as hydraulic fracturing operations, if used);
- Possible sources of water needed for oil and gas development; and
- Potential impacts of the water withdrawals (e.g., drawdown of aquifer water levels, reductions in stream flow, impacts on aquatic life, wetlands, and other aquatic resources).

In addition, the EPA recommends the Draft EIS include a general discussion of how flow back and produced water will be managed including:

- Estimated volume of produced water per well;
- Options and potential locations for managing the produced water (i.e., UIC wells, evaporation ponds, treatment and reuse);
- Possible target injection formations, formation characteristics and depth of any UIC wells; and
- Potential impacts of produced water management.

The EPA also recommends the BLM encourage operators to consider recycling produced water for use in well drilling and stimulation, thereby decreasing the need for water withdrawals and for produced water management/disposal facilities and minimizing the associated impacts.

Water Resource Monitoring

The EPA recommends that the Draft EIS address how water quality monitoring in the project area will occur at the project level prior to, during, and after anticipated development to detect impacts to both surface water and groundwater resources, including private well monitoring. As Utah has no requirements presently for surface water or groundwater pre- and post-development monitoring, the EPA recommends the Draft EIS describe how project-level monitoring will occur to identify any impacts to surface water and groundwater resources resulting from oil & gas exploration and production. A recent example of a surface and groundwater quality monitoring plan is the “Long-Term Plan for Monitoring of Water Resources” developed by the BLM for the Gasco Energy Inc. Uinta Basin Natural Gas Development Project Final EIS.⁶

(8) Environmental Justice

Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,” applies to federal agencies that conduct activities that substantially affect human health or the environment. Consistent with this order, the EPA recommends the NEPA analysis include the following:

- Identification of any minority, low-income and tribal communities within the geographic scope of the impact area, including the sources of data and a description of the methodology and criteria utilized. The EPA recommends comparing census block group percentages (if available, or, at a minimum, census tract data) for below poverty and minority populations with the state average, and conducting the following steps if a block group percentage is greater than the state average. The EPA does not recommend use of higher thresholds.
- A detailed assessment of environmental justice and other socioeconomic concerns for any environmental justice communities, to the extent information is available, including:
 - A discussion of the potential direct, indirect and cumulative environmental impacts of potential BLM-authorized activities on the health of these communities, including air quality and water quality and quantity impacts.
 - An evaluation of the socio-economic impacts to the local communities, including the potential for any additional loading placed on local communities’ abilities to provide necessary public services and amenities.
 - A determination of whether there may be disproportionately high and adverse impacts, including cumulative impacts, on the identified communities.
- Mitigation measures to reduce any disproportionate adverse impacts. We recommend involving the affected communities in developing the measures. The EPA recognizes the need for early involvement of the local communities, and supports the meaningful

participation of community representatives in the NEPA process.

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